

COMPUTERWORK

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Users Vulnerable With CDC Software

By Edward J. Brule
CW Staff Writer

MINNEAPOLIS The question of software protection is becoming a very hot issue, apparently too hot for Control Data to handle.

The new CDC customer contract specifically states that, if use of CDC software results in a patent infringement suit, CDC will not help defend the user, except at the user's expense.

CDC will defend a user, and pay damages and costs arising from any hardware infringement decision.

It denies any liability, however, in the event of a violation of a software patent, copyright, trademark, or any proprietary right claim by a third party.

The non-liability clause is not

subject to negotiation, except in certain specific instances in which the company could be certain that no previous protection had been obtained or applied for.

A CDC spokesman, however, could not come up with any examples of such a "negotiable" software item or product.

Control Data may be wary of developments in the use of software protection.

CDC is currently being sued for violation of a magnetic drum patent, and the plaintiff, Technitrol, Inc., is confident that judgment will be favorable to CDC.

A Patent Claims Court has just recommended that an infringement claim be decided in favor of Technitrol in a similar suit

against the U.S. If the final decision is awarded to Technitrol, other users, makers, and dealers in drums may be liable for damages.

So Control Data, it appears, isn't taking any chances. The Technitrol suit was filed last summer, a class action against CDC, NDS, Honeywell, and about 200 other parties, and the new CDC contract was announced in October.

Of the other defendants in the suit, NDS said that it accepts "primary responsibility for infringement liability," arising from use of its XDS software.

Corporate lawyers at Honeywell, however, refused to comment on whether their customer contract covered software patent infringement liability.

Users of IBM equipment are protected from claims of both hardware and software patent

violation.

One industry source suggested that insurance against patent infringement might provide a degree of security.

However, a Boston representative of Lloyd's of London expressed skepticism. He said that the unknown risks involved, plus the lack of precedence, would make underwriting "for such a nebulous concept" extremely difficult.

Honeywell's Basic Problems

Basic Compiler Called 'Primitive'

By Peter L. Briggs
CW Software Editor

BOSTON Problems great enough to have caused one of the "hundred or so" users of the Honeywell Information Systems Division's timesharing service to rename the company's Basic compiler as "Primitive" have been brought to light recently.

Honeywell, when contacted, was completely unaware that the problem existed. The complaint of the users contacted showed CW a copy of a letter, detailing his complaints, that had been brought to the Wellesley, Mass., branch office.

Of the eight users contacted at random by CW, three had serious problems. These three were major users of Basic. One of the remaining five expressed dissatisfaction with frequent disk "crashes," but reported no trouble with the Fortran compiler.

The remaining user said he had experienced very few problems with any part of the system, though he used Basic only occasionally.

The system, built from the Computer Control Division's 1648 system and using Control Data Corp.'s built disk, is "loaded with hardware and software problems," according to one of the nine users.

He said that he became even more convinced of this when his bill contained several charges from unknown user numbers and user codes.

Disk Crashes

Among the users contacted, the problems caused by the disk crashes seemed to be the most annoying. Some users reported lost program development time and lost run time resulting from these crashes.

It seems that, should the disks crash, there is no means for notifying the user that it has occurred. One user explained that he had to call the Wellesley branch office to get the system status, when his job ran over time.

Programs stored on the disk might be destroyed, necessitating re-creation and further lost time. One after a disk crash, one user said.

Inadequate Documentation

Among the Basic users contacted, the most frequent complaint was with the documentation. It was cited as being quite frequently in error and very incomplete. One user said that the documentation does not reflect the computer operation, except by accident.

"We spent about one and one-half hours..."
(Continued on Page 4)

J.C. Penney Terminates Tradar Terminal Test

CW West Coast Bureau

GLANDALE, CALIF. The halting of testing of the GE Tradar (Transaction Data Recording) system at J.C. Penney stores, here, is continuing as the puzzle of the week.

After an apparently successful test, the abrupt termination of service last week left many questions unanswered and Penney store personnel confused.

The Tradar system, first installed two years ago, may be a nominated last May by GE and Penney as the ultimate in retailing DP systems.

Under the system, two GE 4145 central processors were connected to devices at the point of sale providing real-time accounting and sales-analysis information.

When first announced the system was predicated to be the answer for retailing chains with at least \$40 million in annual sales and 1,500 sales registers by GE and Penney officials.

Recently, in a point statement, GE and Penney said that they have completed testing the system in a few stores in the Los Angeles area and are now evaluating.

Notice To Subscribers

During the holidays Computerworld will publish a special combined issue that will recap the past year's important industry events.

This issue will be dated 31, 1989-Jan. 7, 1990, and should reach subscribers on January 2.

The next issue will be dated January 14 and will reach subscribers on January 12.

at the results to determine what the next step will be.

The statement continued: "Acknowledging that there have been 'bugs' with the Tradar system, as with any new system, the two firms said they are having the Tradar equipment removed from the Penney stores here, in which it had been installed, to avoid any interference with Christmas business."

Penney People Puzzled

However, CW learned that the management and salespeople the test-site were satisfied with Tradar and puzzled by the removal of the equipment.

Referring to the new system, a store official said, "We loved it. It saved so much time. There were some bugs at first and the sales people sort of resented it, as they do anything new."

But then they really liked it. In two weeks, they'd get an answer back as to whether a charge account was good."

He continued, "I don't know why they took them out. I think that it was some trouble between Penney and GE."

The sales clerk's spoken to also said that the new system "was time" when asked by CW if she wished that the system were back, a clerk said, "Sure do, because as she calculated the sales tax on the back of a scribbled-up pad, "One we have to do everything manually."

They, too, were perplexed by the change. "We never had any trouble with it," was a typical comment.

(Continued on Page 4)

SBC Increases Call/360 Charges, Average User To Pay 14% More

By Frank Putsis

CW Staff Writer

NEW YORK Call/360 customers will have to pay an average of 14% more for their service beginning Jan. 1, 1990.

Service Bureau Corp., which provides Call/360, continued to raise its rates, and said its customers were informed on November 28. The boost will be offset, in part, by the introduction of increased language capability through a new compiler for an interactive Fortran.

It is now undergoing internal testing. An SBC spokesman said the new compiler will be available to some customers about the end of January.

Call/360 CPU time will be more expensive. The new price is \$9 per minute, an increase of \$2 per minute. On-line random-access storage charges are also being increased to \$1.40 per 3600 byte block, from the former

figure of \$1.10 per block, SBC said. Connect-time remains at the \$1.10 per hour level, according to SBC.

Minimum Charge Change

The monthly minimum charge remains at \$100 per month but a change in policy may mean a decrease in minimum charges to some customers.

The new minimum charge will apply to a total customer contract.

The present method of determining minimum charges applies the figure to each customer ID number used for multiple locations.

Some customers, according to SBC, are using multiple ID numbers per contract to isolate charges for multiple locations and/or departments using Call/360.

Individual contracts will now be subject to only \$100 in minimum charges.

In addition a \$2 per month charge that was formerly levied on "sub-ID" numbers in excess of 15 was eliminated. SBC now requires each sub-ID to use at least one random-access storage unit, with this charge applied against the customer's monthly minimum bill.

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Data Bank on 3 Million to Be Auctioned

By Joseph Hanlon

BOSTON — Files on 3 million people are being offered for sale to the highest bidder. Conceivably, bids from the Mafia and even potential blackmailers are welcome, since there are no laws to restrict the sale.

The files are credit reports currently owned by the bankrupt Merchants Reporting Agency, which plans to auction them off in a few weeks. State Rep. Michael J. Daley is quite upset about the proposed sale. When he heard about it, he checked and found that absolutely no laws covered the sale of data banks.

So he has filed legislation that would require credit reporting agencies planning to sell their business to first get approval

from the state attorney general's Consumer Protection Division.

The bill does not include other kinds of data banks. It will be considered in the 1970 session of the legislature, which convenes in January.

The auction of Merchants' files had been scheduled for Nov. 20, but was postponed that morning, possibly because of the intervention of Rep. Daley. A Merchants' spokesman said that the auction would be held "in a few weeks."

Daley said that he was concerned both because of the questionable relevancy of the files, and because they might fall into the wrong hands.

He said that he saw one file from Merchants that contained the statement: "Does not seem to be very well known in the

community."

That person had lived at the same address all his life — 27 years — Daley said.

"There is no reason for things like this to be in a file," he declared.

He also noted that when a friend was taken on a tour of Merchants before the scheduled auction, the official taking him around laughingly said things like "wouldn't you like to be a blackmailer and have access to these files?" To Daley it is not a laughing matter.

Now We Know Why SDS Changed Its Name To XDS

LOS ANGELES — It happens to the best of us.

Hal Bergstein applied for a bank credit card a while ago, and Hal is a man of some substance, now assistant to the president of Computing Machinery Corp. and formerly assistant to the president of SDS.

Stock options being what they are, he was surprised when the bank denied him credit.

So Hal had his CPA straighten the matter out with the bank and then applied again.

Still no credit card.

Another call to the bank, this time from a new CPA. Hal discovered that no matter how well-off, the bank just was not going to give credit to the assistant to the president of the Students for a Democratic Society.

Now you know why SDS changed its name to XDS.

NOTICE OF ADVERTISING RATE INCREASE

Because of increased circulation (up over 30%) in 12 months, and to meet increasing production and distribution costs, and to continue the improvement and expansion of our editorial and news coverage of the computer industry, we are announcing a rate increase effective January 1, 1977. The increase averages less than 20% over our current rates. This keeps CW the most cost effective medium in the industry, the most frequently read, and the most timely publication.

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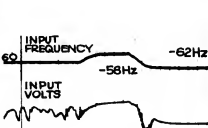
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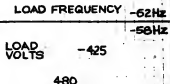
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COMPUTER

Credit Card Holders' Spending Habits Analyzed: Numerous Thefts Disclosed

NEW YORK—A computerized analysis of spending habits of Diners Club members, who have credited with uncovering the theft of hundreds of blank credit cards [CW, Sept. 18, 1968].

About 400 of the 1,000 stolen cards were duplicated by an embossing machine repairman, who then sold the cards to the underworld. Before he was caught and subsequently convicted, Alphonse Confessore was indirectly responsible for Diners Club losses exceeding \$719,000. Sudden abnormalities in the spending patterns of supposed

holders of the cards were pointed out by the computer, which has a complete transaction file for all holders.

Diners Club is not unique in this application, although this may be the first time a computer has actually disclosed such a large theft before any customers complained of unauthorized charges, or before a company could detect any fictitious accounts.

One of the largest credit card companies, American Express, reportedly issues a monthly "10 Most Wanted" list. It rewards the finder of such a card with \$100, in addition to a basic "finder fee" for cards in lesser demand.

While theft, forgery, loss, and black-marketing of credit cards is of concern, the computer can analyze the actual habits of the rightful owners, something not possible to steal or forge.

Scientists are now working on a system which electrically analyzes a spender's fingerprint, so that cards (as well as cash) might be eliminated.

Meanwhile the Confessore case has taken on an uglier aspect. Out on bail awaiting sentencing for fraud, the Manhattan embossing-machine repairman was found murdered on a New York street.

He had five bullets in his head and neck, an apparent victim of a gangland execution.

VA and Honeywell Investigate Ways To Link Satellite Labs in Hospitals

LOS ANGELES—The Veterans Administration (VA) and Honeywell are studying ways to link clinical laboratories in satellite hospitals with a central computer. The study's goal is to improve patient care at reduced administrative expense.

Utilizing a systems analysis technique, teams of VA and Honeywell systems experts are exploring hardware and software requirements of a regional clinical laboratory information-handling system. The study is to be completed in March 1970.

"The goal of the study will be to evaluate thoroughly all the factors for designing a computer communications system that meets the needs of the pathologist and medical technologist in providing daily laboratory services to multiple hospitals," said Dr. James J. Renier, general manager of Honeywell's advanced communications systems (ACS) department.

A team of pathologists from the four VA hospitals involved has been developing laboratory information requirements separately from the hardware analysis in order to insure a clear understanding of user needs, officials said. A Honeywell 1250 business computer of the data processing center will serve as the central processor and a Honeywell 516 scientific computer as the satellite computer in the study.

Computer Census-

End of '69 = 70K

NEW YORK—As many as 70,000 computers will be installed in the U.S. by the end of 1969 according to the latest Diebold Computer Census. The figure is based on the likelihood that this year's deliveries will equal the 15,000 units delivered in 1968.

The number of computers installed rose by 6,000 in the first six months of the year to top 62,000. To reach the 70,000 level, 8,000 new units must be added in the second half of the year when deliveries usually increase.

About 3,800 minicomputers were installed in 1968. It is estimated that 4,500 more will have been delivered by the end of 1969.

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Cutbacks Foreseen in Service Areas

By Phyllis Huggins

CW West Coast Bureau

LOS ANGELES—Major nationwide service bureau operations are cutting back severely in face of serious losses during 1969. Cutbacks are rampant throughout ITT, GE, and DPF&G.

Within the past month GE has increased prices on its time-share service bureau operation 10% and reduced personnel by 150 people, here. Rumor has it that the time-share operation, GE's biggest computer-related revenue producer, is still spending more money than it is making.

ITT, with a nationwide network of IBM systems, lost \$2 million on its service bureau operation in 1969, according to sources within the industry.

ITT tersely termed this estimate as "wrong," but would not qualify this answer as to how "wrong" the estimate was. ITT offers a mix of batched and time-sharing services.

User Demand Slows

Customer demand slowed down to such an extent according to sources, that the 360/65 in the Los Angeles center has been used for on-site card-to-tape operations in addition to the random access, multi-

processing time-share operations. There have also been heavy cutbacks in personnel. ITT said that within the last month or so they have made an across the board chop of nearly 10%.

"We have redeployed our human resources to form the most efficient organization, designed to provide the best balance and flexibility in pursuing our business goals in an uncertain economic environment," was the way the ITT official statement read.

Data Processing Financial & General (DPF&G), late in November merged its Information Systems Co., the software arm, and the Data Center Division, the service bureau operation, into a new Systems Division.

The president of the Data Center Division, Ed Zuckerman, became manager of the eastern region and Mike Knowland, president of Information Systems Co., became head of the western region.

Last week Knowland and his entire staff in the Los Angeles office were eliminated. As there was headquarters for the software operation, this is interpreted as meaning the DPF&G is wiping out its entire software development business.

Honeywell's Compiler Called 'Primitive'

(Continued from Page 1) half hours of connect time trying to figure out the correct use of the PRINT and FORMAT statements. We did, however, and by trial and error, determine the rules, but they didn't resemble the ones printed in the manual," one user said.

"The [Basic] compiler," one source said, "does things without telling the user. When over six nested arithmetic statements are coded, the compiler ignores the excess terms, and doesn't tell the user. The manual says that eight levels of nesting are permitted."

Zero Times One?

"It always thought," said one of the users, "that when you multiplied zero by another number you got zero as a result. When one of our programs began to

produce a result of one, from a zero-by-one multiplication, we got worried!" The results were repeatable, but no one has yet figured out why, he continued.

One of the users contacted some 6.1 hours of connect time (at \$10/hour) and about 520 seconds of compute time (at 4 cents/second) during just one month of operation. Honeywell did credit him for the lost time, after lengthy discussions, he said.

Honeywell Statement

"If there was a problem, why didn't we hear from the customer in the form of a question? It is a proven statistic that our time-sharing system has proven to be one of the best in the industry," a Honeywell spokesman said.

The Los Angeles area office of DPF&G has also cutback severely its service bureau work. The center was opened in July, 1968 with an equipment configuration of three IBM 360/30s, two IBM 7094s and a Univac 1108.

There are now only two 360/30s, one 7094 and 1401 available if the customer, provides his own operator or if there is one available on the premises.

GE Readjusts

Personnel, Computer Centers, And Sales Offices Get the Ax

By Drake Lundell

CW New York Bureau

NEW YORK General Electric's Information Systems Division has begun a major cutback in its present personnel, computer centers, and sales offices. GE, while admitting that it is making "some adjustments" in its time-sharing arm, emphasized that it will continue its "major commitment" to the time-sharing field.

The reason for the major retrenchment of personnel and some services, according to sources close to GE, is "poor protection of the time-sharing market predicted last January 'just haven't materialized' in the dollars and cents marketplace."

One source indicated that the division was projecting revenues of around \$55 million this year, but that \$45 million seemed more realistic at this date. Expected costs for the year were seen reaching \$65 million.

While the company was apparently willing to absorb the \$10 million loss as the fee to stay

The 1108 was purchased from Boeing and is an early model that cannot accept all the software improvements that have been developed.

DPF & G Cut Prices

When it was installed DPF&G cut existing Los Angeles area prices and drew away some customers including a major customer, Garrett Corp.

competitive in the marketplace, the projected \$20 million loss was considered too high a price, he said.

GE would not comment on its projected and actual revenues for the year, but did indicate that, while revenues weren't as high as expected, they were up 30% over last year.

About 20% of the division's personnel will be affected by the cutback.

GE refused to divulge personnel statistics, but industry observers estimate that 30% would mean a total of 300 to 400 people—almost evenly split between the field force and the headquarters staff.

While not confirming or denying the number of people involved in the cutbacks, GE said overall division personnel would be up 10% over last January, even after all of the cuts, have been made, and field force employment is up 65% over January.

In addition to personnel cuts, GE will also combine some of its computer centers in the battle to

Due to limitations in the 1108 model, Garrett eventually went back to UCC after negotiating a price below UCC's standard rates.

The Los Angeles center has been operating in the red since it opened, getting into the black only this November after all the cutbacks.

Personnel has been reduced from 20-30 people per shift to only 2-3 people.

bring revenues and expenditures in line.

Finally, the firm operates 17 separate computer centers and, even though plans are still undergoing review, the firm will probably cut that number to five.

The centers left after the realignment will all be equipped with several processing units. The realignment will not mean any fewer computer systems, just fewer locations. Major centers will be left in Teaneck, N.J., Minneapolis, and Los Angeles.

One of the additional centers will probably be located in the South.

In line with the computer center consolidation, GE is already beginning to "redeploy" some of its Mark 1 time-sharing systems, which are based on the GE-265 computers. Several of these are under-utilized at the present, but will be redeployed to other sites. The Mark 1 service on the GE-600 series computers has been discontinued.

The details of this deployment have yet to be worked out, but GE is considering entering into a franchise operation with the now under-utilized Mark 1 systems. The other possibility would be to use them in GE's international time-sharing operations.

Another move underway at GE to cut costs is the combining of several small sales offices. In addition to cutting costs, the move will get GE out of some unproductive markets, sources outside the firm said.

The first step in the crash cost-cutting program at the firm involves the merger of the International Information Systems Department into the International Systems Division. The combined organization, headquartered in Bethesda, Md., will be under the direction of Paul Leddy, who formerly managed the international unit.

The architects of the realignment in the Information Systems Division were Paul Sage, division general manager, and Arthur Petelosio, vice-president and general manager of the firm's International Information Systems Division.

Petelosio, who runs GE's overseas subsidiaries, is said to be one of the firm's top trouble shooters, and has been on the job at the domestic division for the past two months.

J. C. Penney Terminates Tradar Terminal Testing

(Continued from Page 1)

The removal of a system that had resulted in significant savings of time and effort at the beginning of the store's business season indicates that there might be problems elsewhere.

Industry sources have seized on the word "bugs" in the joint release and are speculating that

the test had failed. Although unconfirmed by both GE and Penney, rumors are rife that the two companies are negotiating to cancel the \$10 million contract.

Thus far, both GE and Penney have restricted their comments to their statement and seem to be content to let the rumor-mongers have a field day.

COMPUTERWORLD

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105 Exhibitors at Compo East: Chapin Leads Seminars

NEW YORK—The first of Computer Exposition's regional software and peripherals shows, Compo East, has already attracted 105 exhibitors using 200 booths, and according to Bernard Lane, president of Computer Expositions, attendance should be well over 10,000.

Compo East will be held on Jan. 19-21 at the New York Hilton Hotel.

Lane stated that the purpose of the three Compo shows was to attract business people concerned with EDP but not deeply enough involved in the industry to trek to Las Vegas for the FICC.

Data processing consultant, Dr. Neil Chapin of InfoTel, Inc., Menlo Park, Calif., has been named to direct its seminar program.

Lane said that the seminars

should focus on management applications of data processing rather than the technical aspects. Chapin is a pioneer in the computer applications field and is ideally suited to direct these seminars," he said.

A noted teacher, lecturer, and author, Chapin has 16 years of experience as a data processing consultant, including several years in data processing and operations research with Stanford

Research Institute and in systems and procedures for Ford Motor Co. and American Can Co.

Chapin is a member of the American Management Association, Association for Computing Machinery, Data Processing Management Association, American Institute of Industrial Engineers, Educational Data Processing Association, and the Operations Research Society of America among others.

Registration Results.

Compo East is boasting a computerized registration system. Each person who attends the show will be assigned an identification number when he fills in his registration form. Exhibitor personnel then record the individual's ID number on pre-printed forms along with codes for area or degree of interest, and the system merges and collates all the information about

inquirers at individual exhibits by geographic, occupational, alphabetic, and degree-of-interest criteria.

Output will be available on mailing labels, print-out, or computer-personalized letters. Statistical analyses will also be available for planning future shows.

The Compo management hopes that this system will help the exhibitors to attract more of selected potential customers through pre-show mailings, gather more information about inquirers during hectic hours, and provide salesmen with customized listings and statistical data.

Compo East also had be devoting some of its floor space to seminars for institutional investors. Stan Lee, former vice-president of the Chase Manhattan Bank, and now with Patents International Affiliates, will be conducting some of these.

DPMA to Hold Second Unbundling Series

PARKRIDGE, Ill.—Another series of "unbundling" briefings will be conducted by the Data Processing Management Association in January similar to those held in six cities in November and early December.

The new series has been arranged because of the enthusiastic response to the first sessions which the number of participants exceeded attendance expectations, according to a DPMA spokesman.

The dates and locations for the new meetings are: Jan. 7; Atlanta, Ga.; Atlanta American

Motor Hotel; Jan. 15, Boston, Sheraton-Boston Hotel; Jan. 16, Montreal, Canada, Bonaventure Hotel; Jan. 21, Detroit, Detroit-Hilton Hotel; Jan. 22, Kansas City, Mo., Bellevue Motor Hotel; and Jan. 23, Minneapolis, Radisson Hotel.

Conducting the briefings will be two of the experts who led the first series: George J. Ravazolo, president, Advanced Systems, Inc., Mount Prospect, Ill.; and William Bresnahan, president, Bresnahan Computer Corp., Cicero, Ill. The third expert will be a representative of

Arthur Andersen & Co.

Terms of the program will provide a full-group morning session at which each of the three speakers will present their views on likely effects of the new separate-pricing policy.

Split group workshop sessions will be held in the afternoon to facilitate more individualized discussion.

The separate workshop sessions in the afternoon will focus on the areas of education, systems engineering and programming software.

Registration will be limited, but is open to non-members. They will be handled on a first-come first-served basis. Fees are \$55 for DPMA members and \$75 for others. All briefings begin at 9 a.m. and conclude by 5 p.m.

Registration forms are available from DPMA headquarters, 505 Busse Highway, Park Ridge, Ill. 60068.

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COM Systems Could Revolutionize Microfilm, Computer Industries

NEW YORK—Computer-output-microfilm systems and equipment "have the potential to revolutionize both the microfilm and computer industries," Charles P. Yerkes told a press briefing here.

Yerkes, who is treasurer of the National Microfilm Association, stated that computer systems would be the "greatest catalyst" to the rapid growth of the microfilm industry in the next five years. "Computer-microfilm interfaces do not end with COM," he added.

For example, he said, "new information storage and retrieval systems are now available which store over 20 million pages of

information on microfilm in the form of a mass memory. In computer terms this is over 900 billion bits of information."

These microfilm memories have packing densities 20 times greater than the best available magnetic tapes, the NMA official added.

Karl Adams Jr., president of NMA, estimated that the COM industry alone would grow from today's \$100 million for equipment and film "to over a billion dollars in five years." The field is growing rapidly, he said, noting that "COM hardware manufacturers jumped from five to more than 35, and COM service companies from 10 to more than 100" in the past year.

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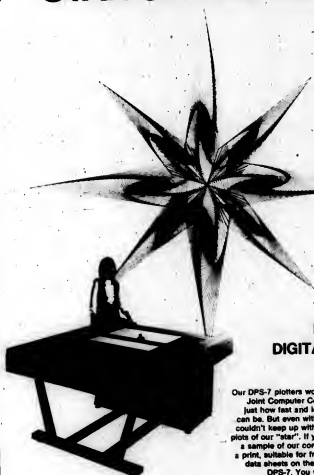
None of the past, nor any of the future would be possible without you — our subscribers and advertisers — our customers. Thank you for this past, and thank you in advance for the future. We are proud to share with you in an industry growing at the rate of one billion dollars a year. May we at COMPUTERWORLD extend to you our best wishes for this Holiday Season, and continued prosperity in 1970.

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Computer May Become 'Tool of Repression'

NEW YORK — The computer may become "a tool of repression" unless the computer industry and federal government take major action now to "recapture privacy and democracy from the computer," warned Rep. Cornelius E. Gallagher (D-N.J.).

Speaking at a seminar sponsored by International Computer Programs Inc., the chairman of the Right to Privacy Inquiry struck out at the dangers to personal privacy in the computer age and the related problem of increasing dependence on a "technocratic elite."

"How does society make due process of law relevant when a single reel of magnetic or plastic tape, containing the intimate details of thousands, perhaps millions, of lives can be transferred from a computer in one jurisdiction to a computer in another? How can one translate Constitutional search and seizure guarantees into reality when it takes

only a few microseconds for all data about one individual to be brought to the attention of anyone clever enough to gain access to a computerized information system?" Gallagher asked as he discussed data processing's potential circumvention of the Bill of Rights.

Gallagher, speaking at the New York Hilton Hotel, said that the expertise an elite can bring to public decision-making was "undeniable and necessary, but my point is that this elite frequently bypasses, and indeed has contempt for, the traditional checks and balances of democratic government."

Appealing directly to the senior computer industry executives in his audience, Gallagher concluded, "If you can take the lead in making the computer an instrument for human fulfillment rather than a tool of repression, the American dream will be realized, rather than becoming a nightmare of despair."

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Viewpoint: Rep. Gallagher

Committee Should Study Technology, Human Values

The new technology today has a pervasive effect on every single aspect of American life. Its problems are those which cannot be dealt with in an organization focusing on specialized areas of interest. We must assess long-range impacts and side-effects which are frequently both ill-perceived and potentially harmful to immediate success of programs, and we must assemble a body of knowledge which assimilates insights from many disciplines. Therefore, I propose that the House of Representatives establish a Select Committee on Technology, Human Values, and Democratic Institutions.

It is instantly apparent that such a wide-ranging consideration of potentialities and contents must, by necessity, cut across existing lines of Congressional committee jurisdiction. The problem is so vast and promises dislocations in so many areas of our life, that it is outside both the jurisdiction and the competence of existing committee structures.

We must resist the temptation to establish a Commission, rather than a Select Committee. We must input data to keep the Congress relevant to the new technology and I feel that it should be oriented toward and controlled exclusively by the Legislative Branch, which most closely reflects the voice of the people. It is my judgment that the legislative process itself stands in the most danger and therefore, as a simple act of self-preservation, we alone must guide the scope and direction of the inquiry.

Pollution of Atmosphere

One of the most hopeful developments I have seen in the 91st Congress is the growing realization that a basic realignment of priorities must take place with respect to the deployment of new technologies. The pollution of our air and our water as a side-effect of technology is coming under increasingly informed scrutiny. It is to be expected that the many plans which are circulating in both the Congress and the Executive will coalesce into a new mechanism to provide an assessment of the pollution of our physical environment.

But the pollution of our political atmosphere and the dilution of the role of political leadership in evolving society has received surprisingly little attention. We have underemphasized what the new technology really means and what effects it will have upon the basic democratic processes in which Americans have placed their confidence.

What Would the Committee Do

The first task of a Select Committee would be, in my judgment, to input data about the impact on humans of developing Federal programs. I would envision the Select Committee as being a powerful advocate within the Executive Branch and with Congressional Committees

Rep. Cornelius E. Gallagher is chairman of the Special Subcommittee on Invasion of Privacy. This article is excerpted from a statement he issued when he introduced his Resolution to establish a Select Committee on Technology, Human Values, and Democratic Institutions.

for the rights of the individual citizen. All too often we seem willing to sacrifice far too much in pursuit of the laudable goals of efficiency and economy.

By being able to focus exclusively upon side effects of proposed and on-going programs a Select Committee on Technology, Human Values and Democratic Institutions could discover the toxic in the tonic of technology and could program out what are often regarded as steadily and deadening Federal actions.

I would not presume to detail the full range of activities of the Select Committee. But just one example might be the study of systems analysis; the fullest flower of technology's garden and a revolutionary new scientific decision-making tool. Its apparent success in military and space planning has thrust it into civilian applications as well. Millions of public dollars are being expended and the results remain largely unknown.

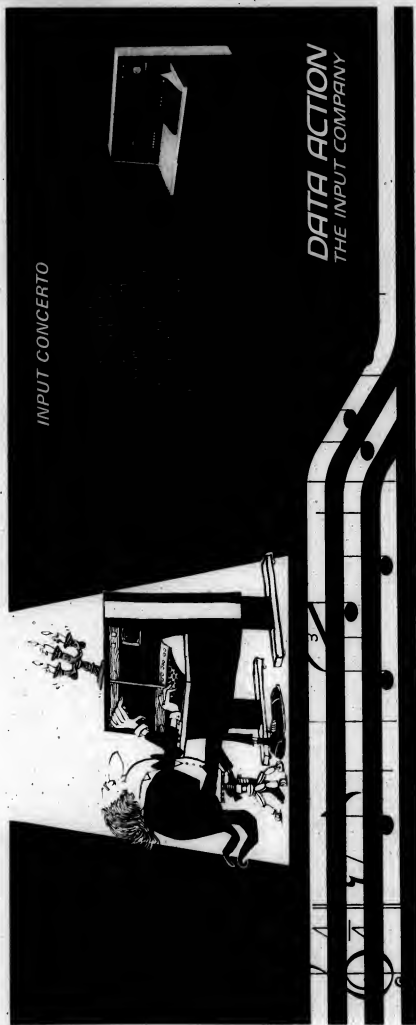
Data Collection Efforts

Its advocacy role could perform another important function. By being a focal point for citizen complaints it might well act as an ombudsman for information policy. The debate over the 1970 Census has disclosed that there is abroad in the land a very real threat of resistance to Federal Data collection efforts. A Select Committee could evaluate citizen distress and could channel it into constructive action.

In no sense will such a Select Committee be a bastion against change nor will it wall against cherished illusions slipping away. It will, in my judgment, help to direct change and help to find the goals to match our means.

It is all well and good for us to talk of freedom and to proclaim our belief in individual dignity. A Select Committee on Technology, Human Values, and Democratic Institutions can be the instrument to make the American dream a reality, and not the nightmare of despair which troubles the sleep of so many acute observers. Only by insisting that respect for the individual be the guiding spirit of our technology, can we expect any respect for the Nation's goals and our Nation's values.

We have an opportunity today to show our seriousness in dealing with the great domestic issues; and the greatest of these is preserving and expanding human values. Our democratic institutions have provided the framework for almost two hundred years — it is up to us today to take this step which may allow the Congress and the Federal Government to remain relevant in our revolutionary times.



Editorials

Is the Price Right?

The first industry reaction to the low prices announced by IBM for its new Cobol, Fortran, and PL/I compilers was one of dismay. There was a feeling that independent software houses would not be able to compete with such low prices.

But as one user put it: "Whether software is expensive or not depends on whether it works." He might also have added that it also depends on how well it works.

While IBM has stated that these compilers carry a low price because they are enhancements to earlier compilers, and that compilers designed from scratch will be priced to cover development costs, the fact remains that the user is the winner for the moment.

IBM has — regardless of the reason — thrown down the gauntlet to the software houses. Instead of just trying to match IBM's prices, the software houses now must prove to the user that their compilers are so much better than IBM's that they are worth the extra money.

If a software house can demonstrate that its compiler produces programs that run twice as efficiently, then it should have little trouble selling it to users — even at many times the price. After all, the value of a compiler lies not in its price but in the efficiency of the programs it produces.

In fact, since IBM compilers formerly were free, the user can subtract the price of the IBM compiler from the price of the independent compiler before passing judgment on the latter's value. After all, he has to have a compiler, so he can consider the price of the IBM compiler part of his mandatory expenses, money which must be paid out one way or another.

So the user is the winner. If IBM had come out with high prices, the software houses would only have had to make slight improvements to get sales. Now they must provide significant improvements before the user will be interested.

In the meantime, the user can pay the lower IBM prices while waiting for someone to offer him a super compiler.



...And a City Big Enough to Hold a JCC.

Letters to the Editor

CDC Has Right to Demand Anything It Wants

Your pathetic cry at the end of your editorial deploring CDC's support services agreement (12/10/69) ("By what right do they (CDC) demand the use of, and the rights to, such (i.e., the user's) materials?") does not evoke much sympathy from one who believes in the free enterprise system.

CDC has the right to demand anything it wants. Whether it gets what it demands is a subject of concern and is something to which you could properly address yourself. There are plenty of consulting firms who would perform support services for people using CDC hardware, and I am sure, some of these consultants would do a better job of it than CDC's would (assuming, of course, that CDC does not have a corner on the talent market).

Norm Zackary, director of Harvard's Aiken Computation Center, once made the point that "application programming is a bottomless pit." Perhaps CDC has decided that providing support services is an undesirable goal for it at this point in time. What better way to discourage potential supporters with lots of money than to define the price of such services in terms other than (or in addition to) money.

By doing so, CDC does not close its doors to support services, but it does make its position clear. This is not an unusual or unethical way to discourage potential customers. The potential customer after all has the ultimate control over whom he does business with. CDC holds far from a monopolistic position with regard to either its hardware or its software support and thus this agreement can in no way be interpreted as a move by CDC to force customers to do something against their better judgment. Furthermore, it is a move which encourages independent consultants to seek this type of business, thereby fostering the growth of business in general.

Personally, I favor unbundling and restrictive manufacturer's support contracts as positive forces leading to greater understanding of software problems and leading, especially, to better solutions of software problems.

Kenneth B. Winicki
Vice President, Technical Development
Information Services Inc.
Babson Park, Mass.

Acts of Extremism Do Not Justify Ends

Today I read with disgust and revulsion the viewpoint article by Joseph Hanlon in the Dec. 10 issue of CW, in which he justifies the Beaver 55 attack on Dow Chemical. This is a strange service which CW performs for its subscribers. Mr. Hanlon's logic, if I may, so generously describe his

thought, confuses righteousness with being right. When he states "But the specific contents of those tapes are unimportant", he may as well say that regardless of whether the accused is guilty or innocent, he should nonetheless be convicted and punished.

Mr. Hanlon is obviously one of those who believe that as long as there are social grievances, people may take license to destroy in the name of those ills. Does not Mr. Hanlon realize that all acts of extremism are done in the name of truth, virtue, liberty, justice, etc.

If Mr. Hanlon believes that such acts provoke reappraisal of conscience (in this case the only reappraisal will be of security) or a coming together in common goals, then he badly misreads the nature of society and man. I could not feel more alienated to Mr. Hanlon, his insufferable purity, and the violence of the immature and self gratifying minds which use the anguish of others to justify their crimes.

Ronald A. Schultz
President

Business Information Systems
Fort Wayne, Ind.

Vandalism Is Vandalism, No Matter What the Goal

Staff writer Joseph Hanlon's viewpoint: "Thoughtful Destruction (???) disturbs me deeply."

He condones this unlawful act because, after all, Beaver 55 destroyed only information, not the machines.

Vandalism is vandalism, no matter what point is to be put across. If we can expect more attacks in the future, it will be because of irresponsible public praise of such criminal acts.

Mr. Hanlon would have done these misguided people a greater service had he exhorted them to study and learn something more than just to erase tapes. Maybe then they could guide computers to improve the quality of life.

Thomas C. Karman, CPD

Rockville, Md.

Hanlon responds: The computer profession has done almost nothing "to improve the quality of life," while it has done a great deal to improve the quantity (if not quality) of death in Vietnam. We should not be surprised that the general public is now realizing this fact, and calling us to account for it.

I do not condone the destruction, but neither do I think that it should be dismissed by saying "vandalism is vandalism." We should take this act as a warning — unless we radically change our attitude and work to benefit people instead of large corporations and the war machine, more attacks are sure to come.

Tighter security will not protect us from the new Luddites. Our only defense is to concentrate our efforts to really improve the quality of life.



Invisible Nuclear Particles Supply Data for Scientists

NEWPORT NEWS, Va.

Three scientists at the Space Radiation Effects Laboratory have linked a computer with an atom smasher to study nature's strongest force.

The forces that hold the nucleus together are the strongest that exist in nature and the strongest of those, says Dr. Richard J. Powers, is the attraction of the nucleus and a powerful nuclear particle known as a pion, or pi-meson.

"We're working with the most fundamental properties in nature," he says. "With a complete understanding of these properties, man will have absolute control of his environment with an almost inexhaustible supply of nuclear energy."

The pion is so small, 100 trillionths of an inch, and its life span so short, 26 billionths of a second, that it can't be seen, even with the most powerful microscope.

But its effects can be observed, and a behavior pattern established in an elaborate detection system built around the laboratory's huge cyclotron, or atom smasher, and scientific computer, an IBM 360/44.

Dr. Powers and his two colleagues divide their time between the classroom and the laboratory, a nuclear research center operated by the College of William and Mary for the National Aeronautics and Space Administration.

"Once we understand the pion-nucleus interaction completely," Dr. Powers says, "we should be well on the way to understanding how a nucleus is held together."

The experiment begins at the cyclotron, which shoots a stream of energy at a target, usually a piece of metal, such as beryllium or stainless steel. The impact shatters the target's atomic makeup, freeing pions for examination.

The pions, 50,000 of them a second, stream through the detection system toward a bank of five targets, emitting x-rays as they slip from one energy level to another, drawn by the nucleus of the target in their path.

The computer system performs as a three-dimensional analyzer. It identifies the target struck, the energy of the x-rays and the times the x-rays occurred.

The computer is connected to the detection system through a special IBM scientific control unit that scales the data, converts it to computer language and sends it to the computer's memory at the rate of 800,000 characters a second.

"The experiment wouldn't be practical without the computer," Dr. Powers says. "We'd need 5,000 electronic counters to record results and at least 1,000 people to watch the counters."

The computer records raw results of the experiment on magnetic tape. It summarizes the data for a printout Dr. Powers can study later.

So far, Dr. Powers' computer analysis has confirmed that pions don't do what physicists generally thought they did.

"You'd expect the attraction to grow stronger as the pions move closer to the nucleus, but that clearly isn't the case," he says. "What actually happens is that the force levels off."

Dr. Powers says the computer has compiled a record of 50 million measurements. "What we have," he says, "is a precise, dependable data base that describes what occurs between the pion and nucleus. We know what happens. Now, we have to figure out why it happens."

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Dual AL-10 Time-Sharing System

Complete Time Share System With Dual PDP-10s Available for Proprietary User

PRINCETON, N.J. — The Dual AL-10 time-sharing system is available from Applied Logic Corp. for sale or lease to companies and organizations wishing to operate proprietary time-sharing systems.

The Dual AL-10 system consists of two Digital Equipment Corp. PDP-10 processors, memory banks, five or six PDP-11 computers, and special interface equipment.

System software and other applications programs are offered with the system, according to ALC.

The Dual AL-10 (System D in the AL/Com network) has two memory drums with a combined capacity of ten million characters.

New Products

The total data storage capacity of the system is over one billion characters, according to the company.

The cycle time of the PDP-10 processors is less than one microsecond. The two fixed-head memory drums of the System D Dual AL-10 have an average access time of 17 milliseconds. System D also has one disk file of 500 million characters for

on-line random access storage. Four tape drives with densities of 200, 556, and 800 bit/in. are attached to each Dual AL-10. The AL-10 accommodates Teletype Models 33 and 35, IBM 2741s, other compatible terminals, as well as line printers, plotters, and visual display devices.

Price or lease details and delivery schedules will be worked out with individual orders depending on the software ordered, according to a company spokesman.

Applied Logic Corp. is located at 1 Palmer Square, here.

NCR Printer: One Drum, 3 Languages

The NCR 640-300 line printer, marketed with the Century series computers, has been equipped with software and print drums that allow it to print in three foreign languages.

One version combines name, Japanese, katakana (simplified calligraphy-based script), and standard Latin characters. The other version combines English, Arabic, and Farsi (used in Iran) on a single drum.

The combination of languages on one drum permits interchangeable use without changing drums. This feature will ease problems normally associated with forms output (such as billing documents) printed in two languages.

Controllers for 2314 Disk Allow Non-IBM Usage

DEER PARK, N.Y. — Three controllers designed to attach 2314 disk units to 16-bit (or larger word) computers have been announced by BCD Computing Corp.

Model D085, which sells for \$10,000, offers a minimum-hardware approach. It depends on software in the host computer for tasks such as formatting, record zero and home addressing.

D087, also a minimum-hardware controller, can control either a 2314 or a 2311, the company says. It is priced at \$12,000.

The D086, a minimum-software unit, is for the 2314 only. It has full buffering, according to a company spokesman. This unit carries a \$22,000 tag.

The manufacturer says that all three handle 16-bit parallel signals, which puts them in line for the current proliferation of minicomputers, as well as for other 16-bit machines.

According to the company, the units offer "the simplest means of attaching removable disk storage to non-IBM machines."

The company also says that it will consider interfacing non-IBM disks that are IBM-compatible.

BCD Computing Corp. is located at 100 East Industry Court.

October 14th, leading Newsweekly features **datamacs** a new proprietary package, which creates test data and increases testing efficiency.

November 1969 **datamacs** installed and working with COBOL systems at Scott Paper, Keystone/AAA, Getty Oil, General Acceptance Corporation and Donaldson, Lufkin and Jenrette.

And here's an example of what they're saying now:

"We are very enthusiastic about this system. It saves us man hours in putting together test data, and the data we get has at least double the integrity of the test data we have put together."

Joseph McMenemin
Data Processing Manager
Keystone AAA of Philadelphia



ERIC LARSON
Creator of Datamacs

And this is what the creator of Datamacs has to say:

"Here at MACS we feel Datamacs will soon become one of the hottest packages on the market. When you have companies like Scott Paper, Getty Oil, General Acceptance Corporation and Donaldson, Lufkin & Jenrette increasing their testing environments by 70% you know you have something.

"This program is changing the normal programmer routine significantly. The normal procedure of creating test data, preparing it for input, then generating files for testing purposes

is completely eliminated.

"The program, designed to operate within the framework of the normal load-and-go COBOL testing environment, works through the use of control cards interspersed through the data division of a COBOL program. The programmer, after placing the control cards in his source deck, then follows his normal pattern of compiling and testing.

"The language of Datamacs allows values to be generated for fields on a random, sequential, or computational basis among others."

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MACS

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December 24, 1969

Page 11

Page-1 Language Controls Typesetting for 360 Users

DAYTON, N.J. — A programming language has been developed that enables IBM 360 Models 30, 40, and 50 computers to operate RCA VideoComp electronic typesetters directly to produce catalogues, illustrated parts manuals, books, and directories.

Called Page-1 (Page Generator), the package is a high-order computer language similar to Fortran and Cobol that has previously been used to prepare

full-page graphic arts composition on RCA Spectra 70 computers.

Page-1 is specifically designed to enable the computer to direct VideoComp electronic composition systems for typesetting any publication format, according to RCA.

The language is written in proof-reader's and copy editor's terms, using simple two-letter codes. The three types of state-

ments in Page-1 are: control words, parameters, and format labels, the company said.

A control word under the system is a two-letter code used to specify or control the composition process. For example, "ps" means "point size," and "bl" means "body leading."

A parameter is a specific value following a control word. The statement "ps, 10" means, for instance, that the text is to be

set in ten-point type.

Page-1 allows users to recall complete formats with few keystrokes, according to RCA. The store-format facility reportedly allows up to 234 different formats to be stored on a single disk memory.

The Page-1 language is said to provide the information needed to handle all aspects of page composition: format, type face and size, justification and hyphenation, pagination, foot-

notes, and copy fitting.

The VideoComp equipment electronically generates 6,000 char/sec or a full page in 10 to 15 seconds.

The language is priced at \$400 a month, including documentation, in addition to the VideoComp equipment (which starts at \$8,000 a month).

The address of RCA Graphic Systems division is Route 130 here.

System 360 Now Has 10 Time-Shared Options for All but Model 20

WHITE PLAINS, N.Y. — IBM currently offers ten different time-shared systems for the S/360 computer family including two new systems, TSO and ITF, that were announced last week.

This chart provides users with an up-to-date overview of these offerings.

Time-sharing can now be used on any 360, except the Model 20, by from one to several dozen users,

depending on system size. All IBM-offered languages can be accessed including: APL, PL/I, Basic, Cobol, Assembly Language, Algol, Fortran (several versions), and any special languages available under OS.

All but three of these service versions (Rex, TSS, and CP-67) offer operating system compatibility, standard terminal support for the Teletypes, IBM communications terminals, and several IBM com-

munications stations.

Core requirements range from 48K (dedicated ITF) on the 360/25, to 512K (TSS) on the 360/67. All offer some form of interactive processing and all but APL-360 offer some form of file manipulation.

Of those that do offer file support, only Call/360-OS does not offer OS/DOS compatible data sets.

IBM SYSTEM/360 TIME-SHARING PROGRAMS

| Name | APL/360 | CALL/360-OS | CP-67/CMS | CPS | CRJE | CRBE | RAX | TSS | TSO | ITF |
|--------------------------|----------------------------|----------------------------------|---|---------------------------------------|---|-------------------------|--------------------------------------|---|---|---|
| Operating system | DOS and OS (MYT) | OS (MFT-II) | None (3) | OS (MFT-II, MYT) | OS (MFT-II, MYT) | OS (MFT-II, MYT) | None (standalone) | TSS has its own operating system services | OS (MYT) | DOS and OS (PCP, MFT, MYT) |
| Terminals (1) | 1050, 2740, 2741 | 2741, TTY | 1050, 2741, 2250, TTY | 1050, 2741, TTY | 1050, 2740, 2741 | 1050, 2740, 2741, 2260R | 1050, 2741, 2260 (1), 2450/1403, TTY | 1050, 2741, TTY | 2741, 1050, TTY | 2741, TTY |
| Minimum CPU | 192K (DOS) 384K (OS) | 384K | 360/67 256K | 256K (LCS supported but not required) | 256K | 256K | 64K (4) | 360/67, 512K | 384K | OS - 64K Dedicated 128K T3 and Batch DOS - 48K Dedicated 64K T3 and Batch |
| Interactive execution | Yes, Interpretive Code | Yes, Object Code | Yes, code depends on operating system used | Yes, Interpretive Code | Job preparation is interactive-execution is not | | Yes, Object Code | Yes, Object Code (8) | Yes, object code | Yes, Object code |
| Languages (5, 6) | APL | BASIC, PL/I, FORTRAN | Those of OS, DOS also FORTRAN, Assembler F, and others under CMS (11) | BASIC, PL/I | N.A. | N.A. | BAL, FORTRAN | Assembler, FORTRAN, PL/I (3Q70) (10) | BASIC, Code and Go FORTRAN Sub-sets PL/I and all OS compilers | BASIC Subset PL/I |
| File I/O | No | Yes, data sets not OS-compatible | Yes | Yes, data sets are OS-compatible | N.A. | N.A. | Yes | Yes | Yes, all OS data management | Yes |
| Desk calculator facility | Yes (7) | No | Yes | Yes | No | No | No | No | In PCS | Yes |
| Low-speed RJE | No | No | Yes | Yes (9) | Yes | Yes | No | No | Yes (2); also high-speed RJE | Yes |
| Syntax analysis | As statements are executed | No | Function of system in use | PL/I, BASIC | FORTRAN, PL/I as options | FORTRAN as option | No | Yes, optional | FORTRAN, BASIC, PL/I Sub-set and PL/I | BASIC and Subset PL/I |

Notes:

1. TTY refers to TTY 33/35 terminals or other fully compatible terminals.

Terminals which are equivalent to those explicitly supported may also function satisfactorily. The customer is responsible for establishing equivalency. IBM assumes no responsibility for the impact that any changes to the

IBM supplied products or programs may have on such terminals.

2. Foreground jobs may be moved to background with no charges; also, jobs may be initiated in foreground and moved to background to complete execution.

3. CP-67 is a special control program — allows operating systems to run under it.

4. RAX requires 128K to support 2260s.

5. Refers to those languages in which the user can write interactive programs.

6. All the features of the languages referenced may not be supported; check the language reference manual for the corresponding time-sharing system.

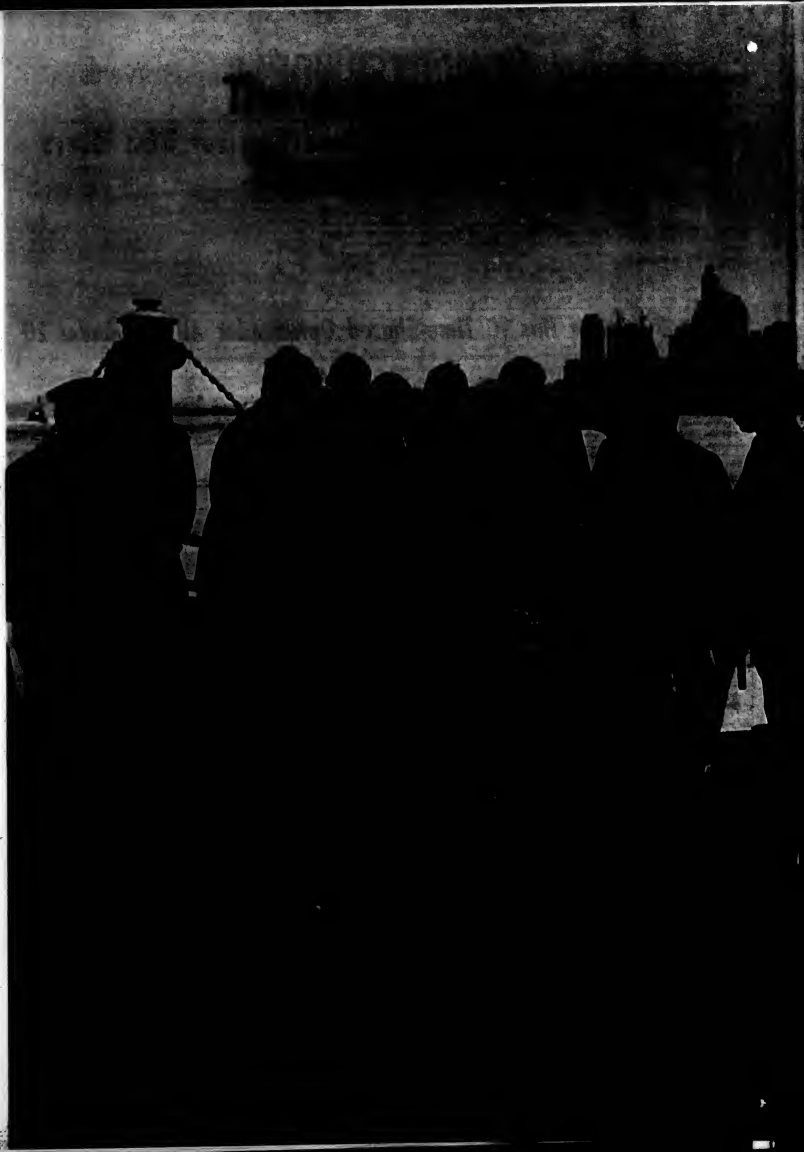
7. Design of APL makes full facilities of the system available in this mode.

8. Has facilities (Program Control System) to assist in debugging and manipulating compiled programs.

9. Foreground jobs moved to background may require modification.

10. BASIC is also available, but as a Type III program.

11. Systems like RAX and APL/360 may be run on the virtual machines created by CP-67.



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Guide Realigns Structure, Elects Officers for '70

DENVER - New officers and structural realignment were determined at the recent meeting of the General Users of Integrated Data Processing Equipment (Guide).

Officers include Herbert Seidensticker of Combustion Engineering, Inc., Windsor, Conn., president; B. Garland Cupp of

Societies

McDonnell Automation Co., St. Louis, vice-president; Allen J. Burris of Northern Trust Co., Chicago, secretary; and L.W. Hutton of Imperial Oil Ltd., Toronto, Ontario, treasurer.

Guide is now structured around four divisions. They are: applications, headed by Gerald F. Price of Cooper-Silverman, Mount Vernon, Ohio; data center operations, under Charles Hoffman, McDonnell Automation Co., management and administration, led by Bruce Mitchell of Union Carbide Corp., New York; and programming systems, under Paul O. Philpot, Hughes Tool Co., Los Angeles.

The organization's next meeting is scheduled for May 24-29 in Minneapolis.

Collected Aflips Proceedings Now Available on Film

MONTVALE, N.J. - All published proceedings from the Spring and Fall Joint Computer Conferences, covering the period from spring, 1961, through the recent conference in Las Vegas, are being made available on microfilm by the American Federation of Information Processing Societies (Aflips).

According to Mrs. Nelle Morgan, production manager of Aflips Press, the proceedings may be obtained as a complete set or as three separate packages.

The materials are priced at \$150 for the complete set or \$50 from spring, 1951, through fall, 1961; spring, 1962, through spring, 1967; and fall, 1967, through fall, 1969.

Proceedings for the five most recent conferences are also being produced individually on microfiche. These are priced at \$10 each for conferences from fall, 1967, through fall, 1969.

Mrs. Morgan said that the microfiche is usable with all standard readers. Prices include all postage and handling, she added.

Calendar

Jan. 5-9, Washington, D.C. - Brandon seminars have been announced entitled "Computer Systems Analysis Techniques" on Jan. 5-6, "Product Control Systems" on Jan. 7, and "Documentation Standards" on Jan. 8. In Chicago, a seminar on "Data Base Management Workshop" will be held on Jan. 5-6. Contact: Matthew R. Smith, Brandon Systems Institute, Inc., 1700 Broadway, New York, N.Y. 10019.

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Honeywell Broadens 1970 Scope Of Educational Services, Sites

WELLESLEY HILLS, Mass. — Honeywell's program to prepare students for careers in the computer industry [CW, Sept. 24,] will become a national effort in February, when classes are scheduled to begin in Los Angeles. Additional courses will start in Atlanta and Chicago in March, a company spokesman said.

In addition, the Honeywell Institute of Information Services will offer education programs tailored for user needs; textbooks and reference materials for data processing educators; and seminars designed to provide advanced training or specialization for those who have had

basic computer exposure.

The expansion is a result of the "overwhelming response" to the program since its inception in the New England area last June, said Robert P. Henderson, vice-president and general manager of Honeywell's electronic data processing division.

75% Placement

So far the training program, which is open to college graduates and qualified high school and junior college graduates, has compiled a placement record of about 75%, a spokesman noted. The post-graduate course runs for 480 semester hours, eight hours a day for 12 weeks. Un-

dergraduate training lasts for nine months, and includes 475 hours of laboratory work, lectures, and case studies. Both courses include hands-on training with a Honeywell Series 200 system, the company said.

The training costs a student about \$1,700, although the company hopes to institute a loan program soon that would enable more students to apply.

Henderson explained that the programs tailor-made to customer requirements would "in no way conflict with the free customer training included as part of the Honeywell sales packages."



COMPUTERWORLD

education

British-Developed Systems Course Available in U.S.

NEWBURYPORT, Mass. — The international edition of the basic systems analysis training course, originally developed through a government-sponsored effort in Great Britain, is being marketed in the U.S. by Enteltek, Inc.

The 240-hour semester course is designed to train junior systems analysts from school and business by upgrading experi-

enced programming, accounting, and operating personnel.

Enteltek also suggests its use as a follow-up EDP course or a one-semester advanced course in accounting or industrial engineering.

Developed under the direction of the National Computing Centre, and drawing from various manufacturers, user groups, and EDP instructors, the course is said to be applicable to "all types of users and all types of equipment."

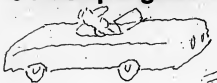
Specific programming skill is not necessary, according to the company.

A minimum of six students is required, and the sponsoring firm or institution must furnish one lead instructor.

The curriculum package is priced at \$7,000 and includes the instructor's lecture outlines and notes, a variety of visual teaching aids, a week-long workshop for instructors, and 20 sets of student materials, according to the company.

Enteltek is located at 42 Pleasant Street.

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CPA Series 7700 Analyzer \$4960

Pace Computing Offers OS/360 Courses On-Site

ARLINGTON, Va. — A program of 17 courses to be taught on location for OS/360 users has been announced by Pace Computing Corp.

Commenting on the program, called On-Site, Pace President J.L. Stone said, "We are providing... custom education to meet the urgent needs of computer center personnel. But more essential, we are providing education at the client's location. This allows the adaptation of our curriculum to the unique training needs of the client. We will use his computing facilities and systems conventions to support the course of instruction."

On-Site also provides the client the opportunity of informal consultation with the Pace technical staff during the educational process.

Charges for the instruction range between \$60 and \$100 per day per student, with discounts available as class size increases.

Courses offered include advanced assembler programming, data management coding, task management coding, systems generation, accounting systems, OS/360 systems workshop, OS/360 facilities, job control language, OS/360 error programs, advanced Fortran programming, advanced Cobol programming I and II, introduction to computer-based operations research, Perl and PMS/360, simulation and GPSS/360, and linear programming and MPS/360.

Page 16

Acquisitions

Granite Data Services Corp., New York, a subsidiary of Granite Management Services, Inc., has acquired **Automation Institute of Paramus, Inc.** for an undisclosed amount of cash. Granite Data Services offers data processing services and facilities, including a service bureau, software division, computer school, an equipment sales division, and reconditioning and maintenance facilities. Automation Institute of Paramus, N.J., specializes in teaching computer programming and keypunch operations.

Slent Computer Corp., Houston, has reached an agreement in principle to acquire **Stenograph Institute of Texas**, Abilene, Texas, for an undisclosed amount of Slent stock.

Data Information Services, Inc. of New York has acquired 50% ownership of **Automated Warehouse Systems, Inc.** Data Information Services offers electronic data processing facilities which include consulting, service bureau, computer training school, and personnel recruitment service. Automated Warehouse, which will be operated out of the New York headquarters office of DIS, provides computer

control of inventory, materials handling, and equipment.

Computer Information Systems, Inc., Shreveport, La., has acquired the assets of the Shreveport data-link center of **University Computing Co.**, Dallas. Computer Information Systems provides data processing service to businesses and professional offices in the area. University Computing Co. is a computer utility firm.

Datatron Inc., Santa Ana, Calif., has signed an agreement in principle to acquire two firms: **Orange County Electronics Corp.** and **Nova Circuits** for an undisclosed amount of common stock. Datatron manufactures high performance timing instrumentation, computer controlled test equipment, digital data systems, broadcast devices, and IBM-compatible disk packs. Orange County Electronics and Nova Circuits produce printed circuit boards utilized by electronic and computer manufacturers.

Executive Computer Systems, Inc., Oak Brook, Ill., has acquired the Convert-A-Code system through a franchise agreement with **Convert-A-Code Corp.** of Baltimore, Md.

Microform Data Moves to New

MENLO PARK, Calif. — Microform Data Systems, Inc. has moved into its new headquarters building at 2700 Sand Hill Road here.

The two-story, 14,300-sq-ft contemporary building, which

Expansions

has just been constructed, will be occupied by administrative, marketing, research and development staffs, and a film processing facility.

The company has also leased a 17,600-sq-ft manufacturing facility at 850 Maude Ave. in Mountain View which produces the company's proprietary high-density, ultrafilm readers and processing equipment.

Microform Data Systems is engaged in research, development, manufacture, and marketing of high-density micro-photographic information storage and retrieval systems.

Computer Marketing Ind. To Lease New Building

WASHINGTON, D.C. — Computer Marketing Industries, Inc. has contracted for the erection of a new building to be leased by the company in the Lee Hi Industrial Park in Merrifield, Va. Upon completion of the build-

ing, the company's IBM 360/30 with two high-speed printers will be installed at the new site. A second IBM 360/30 will be maintained at its present office on Arlington Blvd. in Fairfax County, Va. Installation is expected to be completed in Feb., 1970. The additional equipment will give CMI computer letter-writing capabilities of up to 800,000 per week, and unlimited label-writing ability.


A company spokesman also said that the company has leased expanded office and sales space at its present address in Washington, D.C., representing about a 50% increase in the space that it is now using.

Effective March 1, 1970, the company will occupy an entire floor in the National Coal Association Building, 1130 17th St., N.W.


Other Expansions

General Automation, Inc. has opened a new 35,000-sq-ft facility in Santa Ana, Calif., at 1402 E. Chestnut St. The new facility will house administration, automation marketing division, and automation sciences division personnel. International operations, western regional sales, and corporate headquarters will remain at 706 W. Katella Ave., Orange.

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Colo., will open its first center at 268 S. Beverly, Beverly Hills, Calif. The company's patented Scanmate computer and associated filming equipment will be installed in December and will be in full operation by the first of the

Contracts

Control Data Corp., Minneapolis, has received a contract from Grumman Aerospace Corp. to build an on-line telemetry system and computer system for aircraft flight testing. The system is now being installed at Grumman's Calverton, N.Y., test center, at a cost in excess of \$9 million. The system utilizes the 6400 to analyze and display data within seconds, while the plane is flying, so that phases of the test can be repeated or corrected on the basis of the information from the computer.

Board Training Inc. of New York has signed a contract with Realtronics Inc., a subsidiary of Realtronics, whereby KTI will provide operator training with the sale of each new Realtronics system. The cost of the KTI training will be included in the cost of the system.

Under an order valued in excess of \$275,000, Datacraft Corp., Ft. Lauderdale, Fla., will supply the magnetic core memory units for North Electric's new NX-1E commercial telephone exchange system. One unit will be used as the central storage unit for the computer that controls the new telephone exchange, and the other units will operate as exchange data banks, to store information and instructions received by the exchange users.

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study computer programming at
the Southern College of Busi-
ness, Orlando, Fla., through the
use of a NCR Century 100 and a
special conversion program. Nor-
mal output of the computer will
be converted into braille by in-
creasing the force of the print
hammers so they will strike
through a thin felt sheet that
"explodes" the dots.

Southern Systems, Inc. of Hal-
lendale, Fla., has issued an order
to Datacraft Corp. of Ft.
Lauderdale for a full-scale
DC6024 general purpose digital
computer installation. The unit,
which was contracted at a cost
in excess of \$160,000, will be
employed for batch processing
computer services in the con-
struction industry.

Northern Arizona University of
Flagstaff, Ariz., is using a small
time-shared version of the
PDP-8/1, called TSS-8, from
Digital Equipment of Maynard,
Mass. The TSS-8 is utilized by
the university for program de-
velopment, engineering orientation,
and problem solving, as well as
solution of problems in chemis-
try, physics, and other areas.

Two re-orders totaling about
\$1 million were received by In-
ternational Communications
Corp. of Miami from Western
Union and Computer Industries,
Inc., a division of University
Computer Co. Both orders are
for Modem 4400 data sets.

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| 1 inch (1 col.) | \$15.00 per week |

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December 24, 1969

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CUC, Sears Roebuck Cancel Merger; Officers of Both Refuse Comment

GREENWICH, Conn.—Sears, Roebuck has dropped plans to acquire Computer Usage.

Although Sears chairman Gordon Metcalf and CUC chairman Cuthbert Hurd announced that they have discontinued discussions, officers of neither company were available for comment. Computer Usage reported a net loss of \$725,000 on sales of \$9.5 million for the nine months ended June 30.

In August Hurd had predicted profits for the fiscal year beginning October 1969, though.

He stated that the basis for this prediction was the discontinuance of activity in two money losing divisions, Computer Usage Education and Computer Usage Business Services, and hopes that IBM's unbundling would help sales softness in Computer Usage Development Corp., the major functional area of the company.

Foto-Mem to Ship First Mass Memory March '70

By Michael Merritt

© CW Staff Write

NATICK, Mass.—Foto-Mem, Inc. will ship its first FM-300 photo-optical random access mass memory unit in March, 1970, according to James F. Laura, general manager of the company. Shipments will proceed at one month through July, when they will be boosted to two a month through September.

Laura stated that he fully expects Foto-Mem to reach its goal of \$4 million in backlog orders by March 31. The company is shipping three Foto-Vision display terminals this month and plans to have shipped 120 of the units by February.

Quicker about production capabilities, Laura stated that Foto-Mem currently is moving into new plant facilities that will total 70,000 sq ft and will employ 160 people, 135 of whom will be involved in production, by March. When the new production facilities are completed they will have a capacity of \$35 million per year, he said.

Laura predicted that while he does not expect the company to report a profit at the end of its fiscal year in March, he does expect one for the year following. He added that production is up to schedule and he foresees no delays.

The company contends that an FM-300 system is economically feasible for any installation using three or more tape drives. They claim that their system could store the contents of the Boston Public Library in a seven-foot cube.

Foto-Mem went public last January at an offering price of \$8 and is now selling in the mid-forties. The company is obtaining additional capital by the placement of letter stock through Estabrook and Co. Laura stated that this would result in a dilution of about 10%.

There are 1,258,708 common shares of the firm outstanding.

The Foto-Mem product line is based on the FM-300, a mass memory unit that the company says has marked advantages over both magnetic tape and disk packs in cost, size, and access time.

The unit, priced around \$300,000, depending on configuration, can store up to 750 billion bits of information with an average access time of 50 msec and a maximum access time of 500 msec in a five-by-four foot unit. The device can store digital, analog, and pictorial information.

The firm also offers a terminal capable of displaying both digital and pictorial information simultaneously; a printing data terminal with a printout rate of 30 char/sec; electrostatic printing; and standard 53-key keyboard; and a computer featuring 4K to 65K memory and 1 usec memory cycle time.

The computer is the former Wilkison WCS-88.

SCC Resolves Suit With Control Data; Commercial Credit to Give Small Sum

DALLAS—Scientific Control Corp., now in Chapter XI bankruptcy proceedings (CW, Dec. 3), has settled its lawsuit against Control Data and Commercial Credit Business Loans.

SCC had been seeking \$41 million in actual and punitive damages arising from Commercial's failure to consummate a \$4.5 million loan.

The terms of the settlement involved dropping all suits and, counter-suits, relinquishment by Commercial of a license to manufacture and sell the DCT-132, and a cash advance to SCC.

According to Ernest E. Specks, attorney for SCC, the magnitude of the cash advance "was not very great," in the hundreds of thousands as opposed to the millions.

Manufacturer of the successful DCT-132 data communications terminal and the 6700 computer, SCC hopes to pay off unsecured creditors rather than liquidate.

Total Debts

The bankruptcy petition listed secured debts of \$5,098,588, unsecured trade debt of \$5,154,305, and various taxes,

CUC Breaks Nine-Month Records; Will Absorb Leasing, OEM Arms

DALLAS—University Computing Co. has reached new records in sales and earnings for the nine months ended September 30. Net income was \$10.8 million on sales of \$85 million, resulting in earnings of \$1.80 per share.

For the similar period last year, UCC made \$4.8 million on sales of \$41.7 million, or earnings of 84 cents per share, as restated by the company.

Revenues by division were computer utility, \$31 million; equipment rentals, \$23 million; equipment sales, \$20 million; and engineering and construction, \$11 million.

Income from computer operations was \$5 million and from financial and nonconsolidated subsidiaries, \$5.5 million.

Stockholders of Computer Leasing Co. and Computer Industries, Inc., have approved the mergers of the two companies with new, wholly owned subsidiaries of UCC. Both companies have been majority-owned subsidiaries of UCC.

The plan calls for the exchange of 0.1852 share of UCC stock for each share of Computer Leasing, and one share of UCC stock for four shares of Computer Industries.

Computer Industries has been the manufacturing arm of UCC, producing terminals and peripherals, while Computer Leasing has been the equipment lessor.

UCC's balance sheet now shows total assets of \$289,789,000, equity of \$98,421,000, and total long term debt of \$112,147,000.

The company is currently awaiting FCC action on the application of its subsidiary, Data Transmission Co., to construct

and operate a nationwide public service data transmission system. UCC stated that it expected the application to be under consideration for a year or more.

The estimated cost of the system is \$375 million, and it would take four years to build the network.

LeasoCo Data Net Up 60%, Investments Add to Gain

NEW YORK—LeasoCo Data Processing Equipment has reported a major increase in computer consulting and leasing profits, a minor increase in the operating income of 97%-owned Reliance Insurance, and a whopping increase in gain-taking in the insurance company's investment portfolio that add up to a 60% jump in LeasoCo's year-end profits.

Per share earnings for the year ended Sept. 30 came to \$2.71 against 1968's \$1.66, for a total income of \$43.9 million on sales of \$452 million. The 1968 figures were \$27.4 million and \$324 million.

Data processing accounted for \$101 million of the revenues and \$10.15 million of the income. Last year the leasing and consulting services made \$5.2 million for the company with sales of \$61.3 million.

The greatest factor in the gain was the decision to list \$17 million in equity from net realized gain from Reliance's investments. The company took only \$7 million last year, a jump of \$10 million or 142%. The operating income of Reliance rose slightly from \$15 million to \$16.6 million on a gain in sales of \$17 million, from \$33.4 million to \$35.1 million.

Reliance accounted for 75% of the company's profits.

The per share earnings are based on an average of 16,372,000 shares outstanding in 1969 and 14,880,800 in 1968.

Milgo Reports Sales Doubled In Fiscal 1969

MIAMI—Milgo Electronic has seen sales almost double and the balance sheet change from red to black in the year end report issued recently.

The audit results for the year ending Sept. 30, 1969 show sales of \$8,267,000 generating operating earnings of \$279,000. Three extraordinary items totaling \$510,000 bring net income to \$767,000, after allowance for a \$22,000 minority interest in the subsidiary International Commercial Corp. Per share earnings totaled \$1.66, as compared with a loss of 92 cents per share in fiscal 1968.

According to Charles Weston, financial vice-president of Milgo, the two main extraordinary items were the sale of certain product rights for \$140,000 and a tax loss carry-forward of \$309,000.

Originally this cost was to have been borne in-part by the government and the University of California (Berkeley). However, the company continued on its own when Berkeley dropped out, taking the government financing with it.

William C. Lee, president of SCC, told a special meeting of stockholders on Oct. 31 that the firm would need \$9 million in extra operating capital by January to attain a satisfactory financial situation. Martin retired as board chairman two days before this meeting.

6700 Expense

SCC has spent \$2.75 million developing the large 6700 com-

Computer Resources' Sales Grow to \$1M

NEW YORK—In its first full year of business Computer Resources has rung up sales of over \$1 million.

Revenues for the fiscal year ended Sept. 30, 1969, were \$1,029,000, more than four times greater than the \$211,000 recorded during a 10-month period ended Sept. 30, 1968.

Net earnings showed even greater improvement. After provision for federal income taxes of \$56,000, earnings were

\$239,000—nearly ten times more than the \$25,000 last year. Earnings per share were 58 cents, compared to 9 cents.

Computer Resources President M.J. Emerich said, "The leasing of computer disk packs, our primary source of revenue, continues to show the strength we anticipated when we began our business. Currently, we are leasing disk packs to nearly 300 users in 34 states.

"To accommodate this growth,

we increased our investment in equipment in 1969. This investment now exceeds \$4 million, compared to \$1,650,000 just a year ago, and is growing steadily.

"From our original concept of disk pack leasing," Emerich continued, "we diversified during the 1969 fiscal year into disk pack repair, rework, and, most recently, assembly; in addition, we are embarking on a full-scale effort to expand our brokerage firm 'back office' accounting ser-

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COMPUTER STOCKS: TRADING SUMMARY WEEK ENDED DEC. 12, 1969

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|------------------|---------|---------|-----------|--------|------|
| CODE | 1969 | CLOSING | PRICE | CHANGE | OPEN |
| 1 | 107-108 | 161 | IBM/OLIVE | 0 | 161 |
| 2 | 109-110 | 174 | IBM/OLIVE | 0 | 174 |
| 3 | 109-110 | 174 | IBM/OLIVE | 0 | 174 |
| 4 | 109-110 | 174 | IBM/OLIVE | 0 | 174 |
| 5 | 109-110 | 174 | IBM/OLIVE | 0 | 174 |
| 6 | 109-110 | 174 | IBM/OLIVE | 0 | 174 |
| 7 | 109-110 | 174 | IBM/OLIVE | 0 | 174 |
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| 20 | 109-110 | 174 | IBM/OLIVE | 0 | 174 |

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| 1 | 107-108 | 161 | IBM/OLIVE | 0 | 161 |
| 2 | 109-110 | 174 | IBM/OLIVE | 0 | 174 |
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| 5 | 109-110 | 174 | IBM/OLIVE | 0 | 174 |
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| 7 | 109-110 | 174 | IBM/OLIVE | 0 | 174 |
| 8 | 109-110 | 174 | IBM/OLIVE | 0 | 174 |
| 9 | 109-110 | 174 | IBM/OLIVE | 0 | 174 |
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| 11 | 109-110 | 174 | IBM/OLIVE | 0 | 174 |
| 12 | 109-110 | 174 | IBM/OLIVE | 0 | 174 |
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Programming Sciences May Approach \$22 Million Sales in '70 With Eduputer

By Drake Lyndell
C/N New York Bureau
NEW YORK — Programming Sciences Corp., which expects to reach sales of \$2.7 million this year, has predicted that its new Eduputer system could net \$22 million during 1970.

The Eduputer is a portable training device that simulates the operation of the IBM 360/30 control panel and comes equipped with a package of 16 taped lectures, a course outline, and student and instructor guides. The basic price for the complete system is \$3,650.

At the briefing, Albert M. Loring, president of the New York City-based firm, expressed hope that 6,000 Eduputer devices would be sold in their first year. So far, he said, the firm plans to be producing the Eduputer at a rate of 500 to 1,000 per month starting in January, he said.

Major markets for the 360/30 model of the Eduputer are the

nearly 6,500 business and government installations using IBM's Model 30, secondary schools that offer vocational courses in computer operations, and data processing schools. In addition, the firm also sees a growing market in the nation's colleges and universities.

While foreseeing a profitable sales future for the present Eduputer model, PSC also said it would develop other units to simulate the operation of other computer systems, both in the IBM line and from other manufacturers.

Loring said that NCR, Honeywell, GE, and RCA have all approached Programming Sciences on the possibility of developing Eduputer versions to simulate their machines and that the firm was considering several offers from the manufacturers.

The most appealing deal from the PSC point of view, he said, would be one under which the firm would design the unit and the mainframe company would manufacture and market it. PSC would receive a royalty on sales under this type of agreement.

Schlumberger Seeks French Company

NEW YORK — Schlumberger Ltd., a name well known in oil drilling, is planning to take over Compagnie des Compteurs, the French manufacturer of meters and automation equipment.

Schlumberger management said that, assuming the approval of

its board, it will first offer one share of Schlumberger common for each two Compueurs shares held by Banque de Paris et Pays-Bas, which owns, according to Schlumberger, "a substantial interest" in Compueurs.

If all Compueurs holders accept this offer, Schlumberger will have to issue some 940,000 of its common shares, worth about \$86.7 million. Schlumberger currently has 7.7 million shares outstanding.

Levin International Lists \$15M Bond Issue

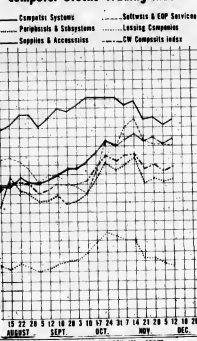
NEW YORK — The American Stock Exchange recently approved for listing a \$15 million bond issue by Levin-Townsend International, Inc.

The company, a subsidiary of Levin-Townsend Computer, was incorporated for the purpose of obtaining funds for investment in foreign countries. Levin-Townsend says it expects to do business overseas much as it does in the U.S., where it leases EDP equipment.

The bonds are 5% guaranteed debentures due Aug. 1, 1988.

For the six months ending Sept. 30, Levin-Townsend Computer reported net income of \$3,584,690 on revenues of \$33,312,572, as opposed to \$5,196,789 and \$22,903,380 for the same period in 1968. Audited results of the international subsidiary's first year are not yet available.

Computer Stocks Trading Index



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December 10, 1969

USM Corporation used to perform inventory control on cards. Now they do it "on line."



Since installation of a medium-scale GE-400 computer system, manual posting of inventory ledger cards is a thing of the past at USM Corporation's Machinery Division at Beverly, Massachusetts. Now, five remote GE video display terminals are used to perform real-time retrieval and updating of inventory records from magnetic disc files. They permit immediate access to information on any of the 75,000 machine parts in their 250,000 sq. ft. store room. But the

General Electric computer doesn't stop there.

It maintains a dollar value for each inventory item. And sets reorder points for each part. Then analyzes risk factors and total resources in calculating an "economic order quantity." It provides a bill of materials for costing and picking inventory parts for each machine manufactured. And prepares either a purchase or manufacture requisition to replenish stocks that reach minimum inventory levels.

But the GE-400 computer still isn't overworked. Its Direct Access

Programming System (DAPS) gives it full multiprogramming capability. It can process complex background jobs concurrently with its on-line duties. Jobs like shop loading and scheduling, payroll, testing, compiling, or financial reporting.

If you think a multiple function computer system like this would pay off in your business operations, take a tip from USM Corporation. Get the details on a GE-400 information system by calling your nearest Information Systems Sales Office. Or write Section 290-70, General Electric Co., Schenectady, N.Y. 12305.

GENERAL  ELECTRIC

